



Protected agriculture course description

1. Course Name:	
Protected agriculture	
2. CodeThe decision	
PRAG408	
3. the chapter /the year	
First semester /2024–2025	
4. Date this was preparedthe description	
1/9/2024	
5. aAttendance forms available	
My presence+onlin	
6. Number of study hours (total)/number of units (total)	
2 theoretical + 3 practical / 3.5 units	
7. Name of the course administrator	
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8. Course objectives	
<p>Enabling the student to understand and assimilateWhat is the matter?QBCultivation a production of vegetables for winter crops At times other than when it is grown greenhousesAnd its relationship with other sciences</p> <p>Enabling the student to know the most important scientific methods in learning abo sciencePlant production and modern methods used to increase production in unheat greenhouses</p> <p>Enabling the student to become familiar with the conceptGreenhouse managememethods of controlling the non-air-conditioned environment, application of mode methods, plant requirements, and important fertilizers for plants</p>	

Empowering the student with the ability to detect Lack of nutrients And all related phenomena A lack of elements

- **The student can Managing fields and following up on modern systems used in protected agriculture, weeds and disease pests**

9. Teaching and learning strategies

- Interactive lecture
- Brainstorming
- Dialogue and discussion
- Field Training
- Practical exercises
- Field project
- Self-education



10. Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Semester test1, Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	introductionIn vegetable crops	A1: A brief history of protected agriculture B1:He possesses the practical and mental knowledge and concepts that help him in...administrationPlastic bots in the field D3:He participates with community members and works to raise their awarenessWith importanceProducing vegetable crops and producing them locally in unheated pots E1:Contributes to enhancing valuesScienceAmong community members and making them aware of the importanceAgriculture is perpetual oilIncreasing green spacesAnd reduce esterDrThe greens	1theoretical	1
discussions	Assigning tasks and reporting	Vegetable crops	The student learns about the types of greenhouses	3practical	
Semester test1, Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Points to consider when constructing greenhouses	A2:Having the knowledge to choose the appropriate location to establish the greenhouse B1:Possesses practical knowledge and conceptsMentality in choosing the direction and topography of the soil C5:Climatic factors and their importance, type of pot and agricultural areas	1theoretical	2
Direct drawing	Interactive lecture, brainstorming, dialogue and	Things to consider when building greenhouses	How to create greenhouses with the application if possible	3practical	

	discussion, field training, practical exercises, and self-learning				
Semester test1, Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Growth facilities	A2:The student learns about the structures of plastic boots, their features, and the types of covers and their heating Wooden stove and heating methods	1theoretical	3
Field evaluation	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learningY	Protected facility	Types of covers used in greenhouses	3practical	
Semester test1, Final test, a report	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Factors affecting plant growth and controlling them	A2: Identifying temperature and mobility and their effect on growth C4:Learn about the effect of temperature on flowers and germination processes D3:Learn about the heat needs of the greenhouse, ventilation, mechanical ventilation processes, and the use of fans E1:It contributes to identifying the advantages and disadvantages of ventilation, heating and cooling methods	1theoretical	4
A short practical test2,	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Ventilation methods	The student learns about the ventilation methods used in greenhouses and their importance 	3practical	
Semester test1, Final test, a report	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Divide the length of the day and the intensity of lighting	C4: The intensity of illumination and the affected wavelengths D3:Apply the effects of lighting, temperature, and water loss E1:Identify the description of the plant, its effect on the length of the photoperiod, and control of the length of the photoperiod F1Learn how to control the intensity of lighting and control the plant's water needs	1theoretical	5
Field evaluation	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Irrigation methods	The student learns about all types of irrigation methods used in greenhouses and implements them	3practical	
Short test, final test	Interactive lecture, brainstorming, dialogue and	The importance of nutrients	A2:He specifiesConcepts for growing crops and nutrients	1theoretical	6

	discussion, self-learning		C4:Determines ways to use major and minor elements D1:Acquiring skills in the processes of using carbon dioxide		
Direct drawing and homework	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Fertilization	The student performs the biological and chemical fertilization of plants grown in greenhouses	3practical	
Semester test2, Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Agricultural operations	A3:KnownHow to use irrigation systems C4:He knows the method of sprinkler irrigation, the disadvantages and advantages of the method, and the practicality of drip, and estimates the plant's needs for irrigation C5:Conducting operations to estimate the plant's needs for elements, analyzing leaves, and methods of addition	1theoretical	7
Field project	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Agricultural operations	The student learns in detail how to carry out the process of hoeing, nurturing and weeding plants 	3practical	
Semester test2, Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Protected agriculture	A3:Identifying the agricultural environment in protected agriculture C4:Learn about the processes and types of soils and mixtures for agriculture and disease and insect control D3Learn about sterilization methods using heat and sterilization using chemicals	1theoretical	8
Direct drawing and homework	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Agricultural circles	In implementation, the student learns about the type of agricultural media used in greenhouses	3practical	
Semester test2, Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Planting dates	A4:Identify the crop, methods and planting dates C3:He uses the information he needs about serving the cropAnd the earthFertilization and quantities of seeds for agriculture Irrigation techniques, disease control, and weather factors for crop success	1theoretical	9
Direct drawing	Interactive lecture, brainstorming, dialogue and	Crop serviceAnd the earthFertilization and	The student learns about the important dates in greenhouse cultivation and how to care for the plant	3practical	

and homework	discussion, field training, practical exercises, and self-learning	quantities of seeds for agriculture			
Semester test2	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Cultivation and production methods under a protected environment	A2: The student learns about modern methods of treating and producing tomato crops B2The effect of lighting intensity and duration, fertilization processes, plant pruning, and breeding inside greenhouses C5Determine the quantities of seeds, the methods of cultivation, the periods of maturity and harvest, and the stages that the fruit goes through, from the green stage to the coloring stage.	1theoretical	10
Direct drawing and homework	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Tomato	The student learns about the tomato plant in terms of how to plant seeds, prepare the appropriate land for the plant, and the environmental factors that are important for the plant's growth and continuity until it reaches the production stage.	3practical	
Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Hydroponics in ponds	A2 Knowing the quantity of seeds, appropriate cultivation and drainage methods, hydroponic farming methods, their advantages, and the disadvantages that may appear in them. C5:Knowledge of diseases that affect crops and insects and modern methods of combating them D3Learn about flowering and pollination processes	1theoretical	11
Direct drawing and homework	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Hydroponics	The student learns about hydroponics and its importance 	3practical	
Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Methods of growing and producing pepper	A2:He recognizesHow to plantand productionThe crop C5:Successfully balances crop production, seed production methods, environmental conditions, service operations, weather conditions, and soil fertility. D2Learn about pruning processes, reproduction methods, planting dates, fertilization procedures, diseases associated with the crop, and methods of prevention	1theoretical	12
Direct drawing and homework	Interactive lecture, brainstorming, dialogue and discussion, field training, practical	Pepper	The student learns about the pepper plant in terms of how to plant seeds, prepare the appropriate land for the plant, and the environmental factors that are important for the plant's growth and continuity until it reaches the production stage.	3practical	

	exercises, and self-learning				
Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	The original home of eggplant	A2:Determines suitable weather conditions, good soil, and planting time C3:It uses the appropriate seed quantity, harvesting, storage and service operations for the crop and the date of maturity and harvest	1theoretical	13
Direct drawing and homework	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Eggplant	The student learns about the eggplant plant in terms of how to plant seeds, prepare the appropriate land for the plant, and the environmental factors that are important for the plant's growth and continuity until it reaches the production stage.	3practical	
Short test,Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning 	Cultivation of cucumbers and all kinds of pumpkin crops	C3:He uses the information he needs and what is available to him to master the work of growing the crop C5:It successfully balances investment in modern irrigation techniques, the amount of seeds, fertilization operations, and consideration of soil serviceFertilisersVarious processes of grafting, flowering, pollination, contracting, and sexual expression D2Identify diseases associated with the crop during the production period	1theoretical	14
A short practical test3	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Option	The student learns about the cucumber plant in terms of how to plant seeds, prepare the appropriate land for the plant, and the environmental factors that are important for the plant's growth and continuity until it reaches the production stage.	3practical	
Short test,Final test	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Growing fruit under greenhouses	C4:Draws plans and programs for development in the management of unheated greenhouses C5:Successfully balances an investmentFertilisersWeather conditions, suitable soil and seed quantities to increase production of fruit crops under protected agriculture, planting dates, irrigation and fertilization operations.	1theoretical	15
Field project	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, field project, self-learning	Greenhouse care	Types of plants grown inside greenhouses	3practical	

11. Course evaluation

Relative weight %	Class	Calendar date (week)	Calendar methods	T
2.5	2.5	fourth week	Report 1	1
2.5	2.5	The fifth week	Report 2	2
2	2	the sixth week	short test (1)Quiz	3
2	2	The fourteenth week	Short test (2)Quiz	4
1	1	The fifteenth week	Short test (3)Quiz	5
7.5	7.5	the sixth week	Semester test (1)	6
7.5	7.5	The eleventh week is difficult	Semester test (2)	7
40	40	Final semester exams	Final theoretical test	8
5	5	The fifteenth week	Practical field project	9
2	2	The third and fifth week	Field evaluation	10
1	1	The first week	Practical short test (1)Quiz	11
0.5	0.5	fourth week	Practical short test (2)Quiz	12
1	1	The fourteenth week	Practical short test (3)Quiz	13
5.5	5.5	Weeks 6, 8, 9, 10, 11, 12 and 13	Live drawings and homework	14
20	20	Final semester exams	Final practical test	15
100%	100%	100	the total	

12. Learning and teaching resources

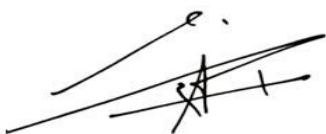
Protected agriculture	Required textbooks (methodology, if any)
- Dr.. Issam Abdullah Bashir1990. Protected agriculture, Dar Al-Hekma for Printing and Publishing - Mosul	Main references (sources)
	Recommended supporting books and references (scientific journals, reports....)
Agriculture Net	Electronic references, Internet sites



Practical subject teacher
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Muhammad Al-Sultan



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